Arboricultural Appraisal Report

Subsidence Damage Investigation at:

10 March Street
Kirton Lindsey
Gainsborough
DN21 4PH

CLIENT:	Davies Group Ltd
CLIENT REF:	71815688
MWA REF:	SUB190501-4363
MWA CONSULTANT:	Mark Johnson (FdSc;M.ArborA)
REPORT DATE:	22/05/2019

SUMMARY

Statutory Controls			Mitigation (Current claim tree works)	
TPO current claim	No		Policy Holder	Yes
TPO future risk	No		Domestic 3rd Party	No
Cons. Area	Yes		Local Authority	No
Trusts schemes	No		Other	No
Local Authority: -	North Lincolnshire County Council			

MWA Arboriculture Ltd
Bloxham Mill Business Centre
Barford Rd, Bloxham
Banbury
OX15 4FF

Tel: 0191 432 9560
Email: office@mwaarboriculture.co.uk

Introduction

Acting on instructions from Davies Group Ltd, the insured property was visited on 15/05/2019 to assess the potential role of vegetation in respect of subsidence damage.

We are instructed to provide opinion on whether moisture abstraction by vegetation is a causal factor in the damage to the property and give recommendations on what vegetation management, if any, may be carried out with a view to restoring stability to the property. The scope of our assessment includes opinion relating to mitigation of future risk. Vegetation not recorded is considered not to be significant to the current damage or pose a significant risk in the foreseeable future.

This is an initial appraisal report and recommendations are made with reference to the technical reports and information currently available and may be subject to review upon receipt of additional site investigation data, monitoring, engineering opinion or other information.

This report does not include a detailed assessment of tree condition or safety. Where indications of poor condition or health in accessible trees are observed, this will be indicated within the report. Assessment of the condition and safety of third-party trees is excluded and third-party owners are advised to seek their own advice on tree health and stability of trees under their control.

Property Description

The property comprises a detached bungalow built in c.1955. External areas comprise grassed gardens to the front and rear.

The site slopes from steeply from rear to front and sits on a raised level from the street.

Damage Description & History

Damage relates to the right hand flank of the property and was first noticed in September 2018. Stepped diagonal cracking is evident below the windows on the rear right elevation. For a further synopsis of the damage refer to the engineer's report.

At the time of the engineer's inspection (15/10/2018) the structural significance of the damage was found to fall within Category 2 (slight) of Table 1 of BRE Digest 251.

We have not been made aware of any previous claims.

Site Investigations

Site investigations were carried out by Optera on 01/02/2019, when a trial pit was hand excavated to reveal the foundations, with a borehole sunk through the base of the trial pit to determine subsoil conditions. A drains survey was also undertaken. Please refer to the site investigation report for details.

Discussion

Opinion and recommendations are made on the understanding that Davies Group Ltd are satisfied that the current building movement and the associated damage is the result of clay shrinkage subsidence and that other possible causal factors have been discounted.

Site investigations and soil test results have confirmed a plastic clay subsoil of medium volume change potential (NHBC Classification) susceptible to undergoing volumetric change in relation to changes in soil moisture. A comparison between moisture content and the plastic and liquid limits does not confirm desiccation possibly due to the timing of sample recovery after winter hydration of the soils.

Roots were observed to a depth of 1200mm bgl in TP/BH1 and recovered samples have been positively identified (using anatomical analysis) as Ivy, the origin of which will be H1 and C1 confirming their influence on the soils below the foundations.

Irrespective of the identification of recovered root samples, the roots of TG1 (Norway maple group) are also likely to be present below foundation level in proximity to the area of movement/damage and influencing soil moisture and volumes.

Based on the technical reports currently available, engineering opinion and our own site assessment we conclude the damage is consistent with shrinkage of the clay subsoil related to moisture abstraction by vegetation. Having considered the information currently available, it is our opinion that H1, TG1 and C1 are materially contributing to the current subsidence damage.

If an arboricultural solution is to be implemented to mitigate the influence of the implicated trees/vegetation we recommend that C1, TG1 and a section of H1 are removed.

Other vegetation recorded presents a potential future risk to building stability.

Consideration has been given to pruning alone as a means of mitigating the vegetative influence, however in this case, this is not considered to offer a viable long-term solution due to the proximity of the responsible vegetation.

Recommended tree works may be subject to change upon receipt of additional information.

Conclusions

- Conditions necessary for clay shrinkage subsidence to occur related to moisture abstraction by vegetation have been confirmed by site investigations and the testing of soil and root samples.
- Engineering opinion is that the damage is related to clay shrinkage subsidence.
- There is significant vegetation present with the potential to influence soil moisture and volumes below foundation level.
- Roots have been observed underside of foundations and identified samples correspond to vegetation identified on site.
- Replacement planting may be considered subject to species choice and planting location.

Table 1 **Current Claim** - Tree Details & Recommendations

Tree No.	Species	Ht (m)	Dia (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
H1	Privet/Ivy	2	Ms	-	1	Younger than property	Policy Holder
Management history		Subject to past reduction/pruning.					
Recommendation		Remove a section to create 3m clearance from the fright flank of the property to near ground level and grub out/grind out stump to inhibit regrowth. Prune the remaining hedge on an annual basis to maintain at new dimensions.					
C1	Ivy	0.1 – 0.3	Ms	9	0.1	Younger than property	Policy Holder
Management history		Recently partially removed from wall.					
Recommendation		Sever remaining vegetation and treat stumps to inhibit regrowth.					
TG1	Norway Maple	10.5	150 300 150	7	15.9	Younger than property	Policy Holder
Management history		No recent management noted.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					

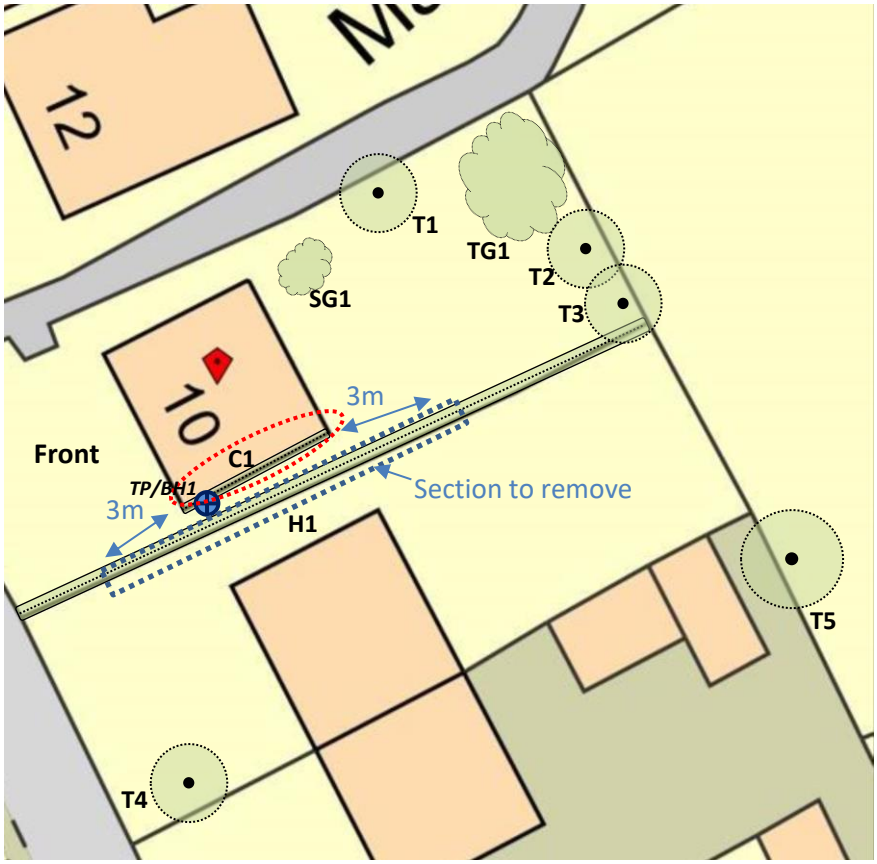
- Ms: multi-stemmed * Estimated value

Table 2 **Future Risk** - Tree Details & Recommendations

Tree No.	Species	Ht (m)	Dia (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
T1	Holly	7	2x150	4	11.7	Younger than property	Policy Holder
Management history		No recent management noted.					
Recommendation		Maintain at broadly current dimensions by periodic pruning.					
T2	Plum	7	180	3	16.3	Younger than property	Policy Holder
Management history		No recent management noted.					
Recommendation		Maintain at broadly current dimensions by periodic pruning.					
T3	Cypress	6	250 x 2	3.5	16.3	Younger than property	Policy Holder
Management history		No recent management noted.					
Recommendation		Maintain at broadly current dimensions by periodic pruning.					
SG1	Honeysuckle/Norway Maple	2	Ms	3	2	Younger than property	Policy Holder
Management history		Subject to past reduction/pruning. Managed as pollard.					
Recommendation		Remove NORWAY MAPLE ELEMENT. Do not allow to remaining vegetation to exceed current dimensions.					
T4	Cherry	5.5	18	6	10*	Younger than property	3rd Party: 8 March Street DN21 4PH
Management history		No recent management noted.					
Recommendation		Maintain at broadly current dimensions by periodic pruning.					
T5	Willow	10*	400*	10*	22	Younger than property	3rd Party: 22 Queen Street DN21 4NX
Management history		No recent management noted.					
Recommendation		Maintain at broadly current dimensions by periodic pruning.					

Ms: multi-stemmed * Estimated value

Site Plan



Plan not to scale – indicative only

Approximate areas of damage

Images

View of H1

View of H1 and C1

View of TG1, T2, T3 and H1

View of SG1